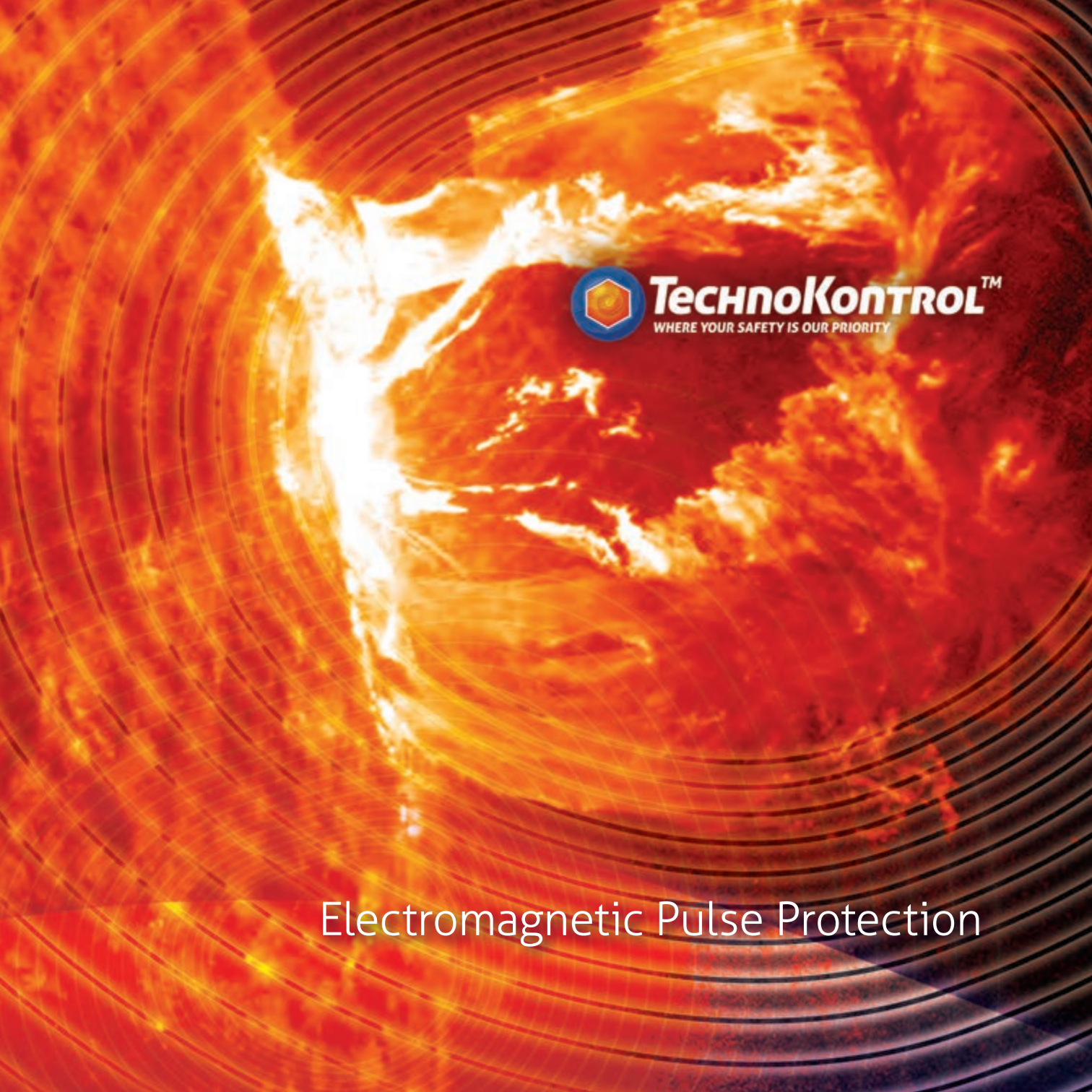
TechnoKontrol™
WHERE YOUR SAFETY IS OUR PRIORITY
Electromagnetic Pulse Protection

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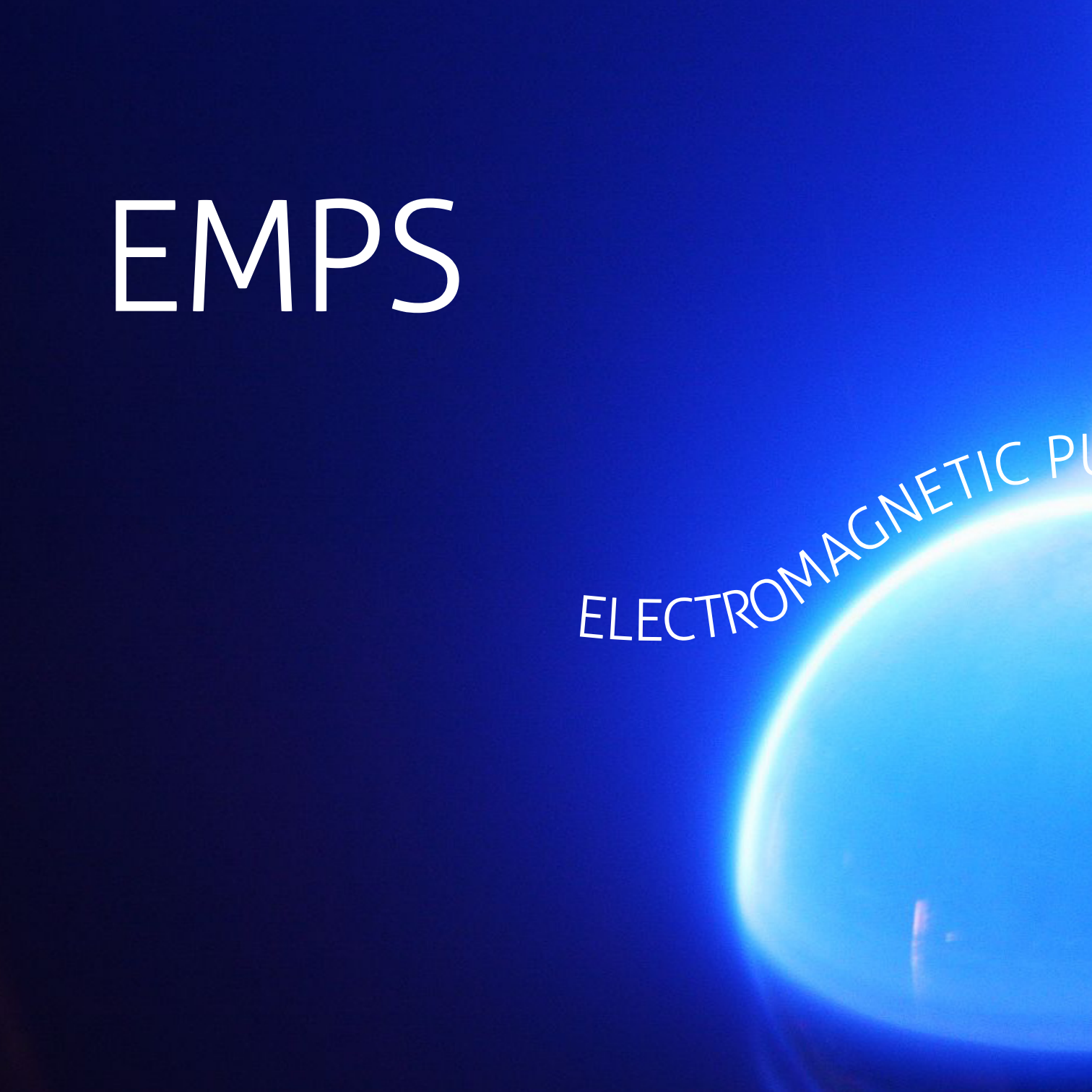
The authority on fire, electrical and building safety

EMPS




ULSE PROTECTION

TechnoKontrol™

WHERE YOUR SAFETY IS OUR PRIORITY

Anti EMPS Systems - Anti Electromagnetic Pulse Technologies

Nuclear Electromagnetic Pulse (NEMP) / Non Nuclear Electromagnetic Pulse (NNEMP) / Electromagnetic Pulse (EMP) / Protection and Safety Panels-Wall-Textile Technologies for Military and Strategic Infrastructures

TechnoKontrol has designed via its R&D programme our unique Anti-EMPS technologies which can work in many different sectors for the protection and safety of the military, national security, strategic infrastructures and law enforcement sectors including strategic databases, cyber warfare and information technology bases including satellites, telecommunications, radars,financial services, government databanks and military installations.

Our exclusive, simple to install, transport, and anti-electromagnetic(Anti-EMPS) technology panels/protecting technology products will allow all types of military, strategic, national security departments, private corporations and even civilians to be protected in the event of any type of EMPS attack, from a ground attack by enemy Special Forces, common criminals trying to rob a financial institutions databanks, terrorists to close down a power station or open a dams gates to flood an area or even to bring down aircraft.

TechnoKontrol Anti-EMPS technology products are effective against EMPS pulses emitted from EMPS bombs/devices which can be delivered in different sizes and means thus not needing to have an extreme technological advanced or unique delivery/launch systems or technologies as a "stealth bomber" or "long range missile launcher" but can be carried in a brief case or even delivered by courier without even knowing of its devastating effects.

Once the EMPS Bomb has been activated which could also include in any mode of transport for example and especially fuel transports systems whom rely on GPS,GMS,satellite technologies as rail, shipping, aircraft and even trucking causing accidents, explosions and full technical failures. Other damages include power shutdowns,environmental damage, loss of life at all levels and even hostage taking at grand level as destroying cruise ships, oil rigs and gas-oil tankers technological control operations centres thus rendering the ships un-controlled and un-directed to their physical sinking/destruction or even causing explosions as engines can be shut down without special cooling off periods or engine burn outs thus causing over-heating of the engines and close down of emergency safety and security systems causing disastrous consequences.

EMP Device

Thus TechnoKontrol developing different types of specialist alloy "Anti-EMPS Technologies" to be easily installed in low cost effective materials and textiles to allow the quick and wide installation of these "Anti-EMPS Protective Technologies" for and especially for the military and law enforcement but also for the industrial, civilian and industrial-commercial strategic sectors which aren´t as prepared as the military. (Most military modern nations are more prepared than the civilian sector but we still feel that there is much to be done at present and in the near future as assets via EMPS bombings can be easily attacked and destroyed and with the simplest incorrect maintenance or installation errors being also factors to increase the effectiveness of any EMPS attack regardless of "hardening/protecting" of the electronics installed into military operational equipment even at original fabrication level).

As this is and will be a new type of "EMPS Modern Warfare" as with "no energy", there isn´t anything, life, water, food, transport, fuels,telecommunications, medical, police services, government,etc. Thus causing the downfall of the nations society, commerce, industry,government and all types of institutions as we understand it in today´s world.

EMPS warfare technology will make a nation return to the "Middle Ages" in a matter of seconds

This EMPS warfare technology will make a nation return to the "Middle Ages" in a matter of seconds and only will be allowed to be "rebuilt" with the assistance and agreement of the outside world which would normally be its probable "initial enemy-prosecutor" who already caused this destruction for some reason. In a simple conclusion the "damage-explosion" of an EMPS attack will be more of an "social systematic-implosion" against the government or rulers of the effected nation due to the lack of basic human needs as mentioned before and no clear knowledge of an "emergency–recovery" plan which could be viable prepared or in financial wealthly-modern-emerging nations but nil in poor nations or regions or countries controlled by terrorists/criminlas or un-elected/ un-stable governments.

EMPS Bombing is by far the most effective way to attack an exact location, region, country but also can be used to "bring down to their knees" any rogue nation, terrorist groups or illegal /occupation/invasion/ wars between regions, states or nations without causing human deaths but allowing as many people to live as possible without any human basic-essential living needs thus destroying the enemies possibility to continue due to not having any electronically opera-

tional hardware but also due to the immediate social unrest and auto-implosion-destruction of their own nation due to internal fighting once this occurred due to the lack of supplies, foods, fuels, medicines, etc. Thus allowing wars to be finished in weeks rather than months or years with the total fall of the "enemy".

The XXI century is also leading the world to move into a new "Technological Military Era", where human deaths and/or injuries are each time are less and less in each battle-anti terrorism scenario due to the more advanced and high-technology military accurate hardware used in each military or anti-terrorism scenarios are more efective. These new types of technological warfare won´t stop terrorism or sabotage attacks against important national infrastructures as pipelines, refineries, factories, jumbo tanks, rail freight transports, police stations, military bases,etc. This will only increase the spectrum of terror or piracy armament portfolio against normal stable nations, governments or corporations for whatever reason, from economical blackmail to political power control, simple eco-politcial-terrorism or to pure international criminal activities.

These types of terrorist or piracy attacks which could also include EMPS Bombings if obtained or fabricated by the "other-side" also will have additional national costs which are the financial, industrial, commercial instability at all levels and the worst of all the social and psychological costs of the civilian population which is most cases are nations which are also the voters of these governments of whom are elected to protect these same people/voters. Thus being paramount that as many as possible basic infrastructures operations centres must be protected at all costs in the event of the worst possible scenarios, especially power grids, water resources, telecommunications centres, civil protection, armed forces, government institutions,strategic fuel deposits, fuel delivery services and most importantly food and medical services to the general population.

EMPS Attack technology and its psychological deterrent effect

The psychological effect of a (possible) EMPS attack by any nation/s and its consecuences can be related to other types of social psychological effects(PTSS) for all wars but can be compared in today´s modern day warfare with the example of continuos high-tech military technologies which for an example can be part of any "aerial drone attack programme" may cause over a period of time legal, criminal, punitive liabilities and damages against a government or foreign military manufacturer or supplier due to their direct & indirect psychological, physical and mental damages of normal civilians or habitants of a region, state, country which aren´t at war but effected indirectly due to their physical location.

However, these mental stresses as the most common being PTSS also effects the "enforcers or military" thus all parties understanding the value of the psychological warfare effects especially with the use of all types of armaments as IED´s(Improvised Explosive Devices) with the increase of mental issues or illnesses of both sides of the attacked/occupied or territorial controlled civilian/military population as PTSS (Post Traumatic Stress Syndrome) due to the continuous in many cases aggressive military/terrorist attacks on both sides which in many cases may be justified due to harbouring such wanted terrorists-criminals but also in many occasions to impose mental stress to reduce any possible assistance of the local habitants to these terror groups. The contra-effect is then the use of IED´s to continue a never ending battle of will but the pyscological drama of all parties doesn´t stop once back home but only begins with the trau-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matic psychological battlefield stresses of all parties and for the rest of their lives, especially worse for the modern nations where living standards and human lives are more valuable socially.

This continuous mental stress pressure (PTSS) of the civilian population by means of the above mentioned high-tech strategic warfare methods which includes anyone unrelated or directly,indirectly related due to their political,religious, terrorist causes which in many occasions creates un-necessary deaths, injuries, hardships, psychological mental long term damage/illnesses and even worst a grave regional/national populous "media-backlash", mistrust, hate and longing for revenge which again continues the planting, seeding and growth of a next generation of possible normal civilians to fight against these types of foreign physical, military,social and psychological aggressions/attacks by means of going into terrorist groups or common criminal activities against an established stable government due to past warfare effects or even historical or personal reasons of being invaded or attacked at younger ages and wishing to "pay back" by some way or manner these personal or family damages.

Thus confirming the possible use of this "EMPS Attack Technology" as a final deterrent would resolve many issues immediately or at least swiftly because the consecuences are extremely well understood and all parties will understand that no electronic hardware would work thus sweeping clean an area clean with any telecommunications, economy, transport,electronics, missile launchers, radios, GPS, etc, and stopping the use of "drone bombings-military occupation/ controls" and allowing the civilians to continue their lives as normal and as best as possible and to regain their trust. Also by implementing a realistic "rebuilding civilian programme" with already established selected civilians of that region to benefit from real effective financial, economic,educational, medical

assistance to create the right base to grow a new society with normal values but always with a secure and realistic future by means of employment and security.

Not only would the EMPS Attack deterrent would be effective but it will be required as mandatory by all selected nations to create a balance of powers and not allowing this technology to fall into the wrong hands thus having technologies or safety products as manufactured by TechnoKontrol to protect and to hinder any type of attack from anywhere or anyone for whatever reason.

The great savings from financial, logistical,military,social,geo-political using these technologies are extremely important and must be considered as another great positive point towards the production of these EMPS technologies and also the safety-security technologies to protect one owns nation, society, family,etc.

We should consider this technology as such as an important military deterrent as the nuclear aramament which has now been effective for more than seven decades and this could be the new long term safer but more strategic deterrent but will be harder to control as too much data and operational units have been shown as effective from private manufacturers without taking into account all the military technological and financial investment also during the last decades into this technology and even more extreme armament as lazers, etc.
Historical technological creation of EMPS-Cyber Warfare technologies

Due to our belief that modern day warfare is moving into a new direction we believe that new modern military technologies based on pre-WWII technological electromagnetic studies and research technologies mainly invented by the Russians and by the best military German research engineering teams created

and effectively tested during 1940-45 having created the first "High Intensity Electromagnetic Electromagnetic Lazer Mobile Artillery Gun in 1944 as a new German Wonder Weapon", which was the real technological birth place of "electromagnetic armament technology" has been the bases of these new upgraded and developed "Modern Era" type of electronic military battlefield ground-aerial-sea armament of the XXI century.

Cyber-war is and has become a real life "virtual battlefield" where governments, private global corporations, financial institutions are presently spending billions of Euros in protecting, preparing, training, anticipating and creating all types of defensive, anti-cyber-attack technology but also contra-offensive or even attack-viral software to hinder, control and to protect these national strategic interests. Who would of thought of modern warefare as todays cyber wars during the 1970´s Vietnam war? This is what will and is occurring with the EMPS technology which may sound un-realistic or even too far into the future in today´s world but will be also a new technological military-defence race but this time we have new comers and not just the "cold war members" but financial criminal economies like the global crime industry which ¡s todays largest global employeer with billions of dollars in disposable assets whom may see this also as a new business venture and without going into global terrorist groups of all backgrounds and political or religuos principles.

This present day cyber war can be understood by how the Iranians have suffered months or even years of continuous delays in their nuclear power program having introduced accidentally by purchasing corrupt technology or deliberately downloading internally viral software by anti-Iranian operatives into their operational technological operations industrial software programs which will never be recognized by any foreign military or nation but it´s obvious that cyber

warfare is active and increasing daily from internet fraud, to internet hackers to all types of terrorists. However, this type of war can be done from a basement in New York to a specialist underground military bunker in Asia.

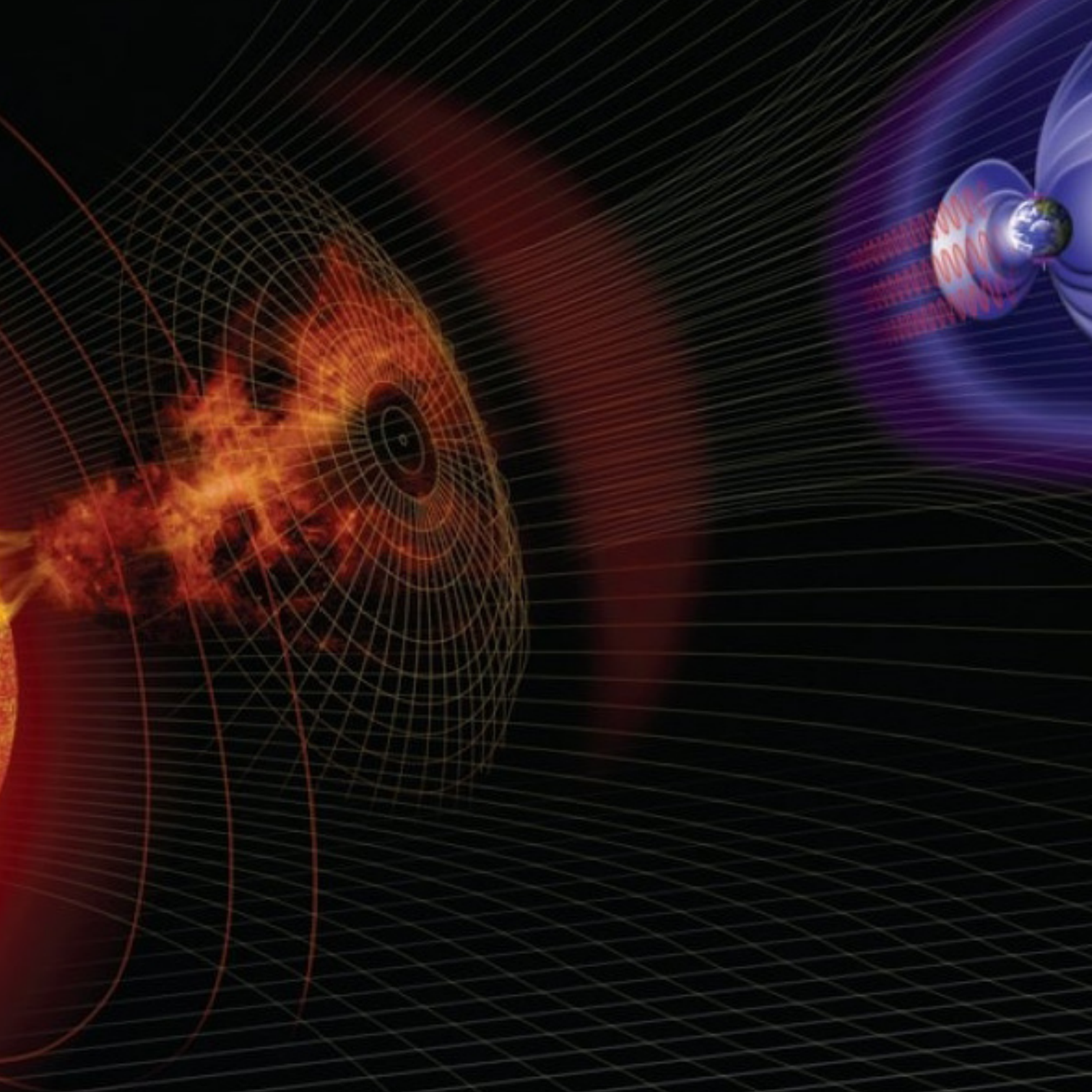
This cyber war has also put "against the wall" the strongest governments of the world and to which they have even admitted that extreme sensitive data has been stolen and continues to be stolen from top military USA top secret military and national security databases which are extremely well protected by means of anti-cyber-attack protected technologies and specialist cyber teams. Thus creating a more balanced "battlefield ground" between the top global governments and even small budget, low resourceful terror groups, criminals thus needing in the future to take these terror, criminal groups out at physical ground level or with EMPS bomb technology if required.

Top secret and highly classified sensitive military documents as the technical plans of the new generation USA nuclear submarines are just one example how cyber warfare has been effective by the enemy as these plans were stolen from the USA government by means of cyber attacks. However, we all must be cautious due to many times military officials from all sides stating this loss of information freely in the media can also mean that there is a large part of "dis-information" and sometimes governments wish their enemies to confirm what they already "know" what they have is known to them or to "inform the other party something which may not even exist to make them think in another direction" as pure "dis-information" and this formula is what helped the allies to win WWII more than any direct military attack or battle scenario during the whole campaign as "information" is the difference between losing a war or winning thus the allies being extremely efficient in having their intelligence resources at the right time and at the right place.

EMPS-Electromagnetic Pulse Systems & EMPS types

We must state that even though the norm for these types of EMPS can also be created by the solar heat, solar flares, solar radiation, etc. We must then also take into consideration that even though we have prepared our TechnoKontrol Anti-EMPS Technology for a direct military, criminal or terrorist attack, we also must consider also natural disasters which may also occur at any time without any real firm precision even though scientific studies state that during 2014-2017 the sun solar activity will be at its highest in many years and we have already suffered in some parts of the world these effects as in Ottawa, Canada and in Australia where the solar radiation brought down many electronic base services.

Even in most related data to solar radiation may be very precise no one can really predict anything 100% when we can´t even forecast the weather in the next three to five days, how can us humans predict a solar flare or radiation sometime in the near future or ever. We must also understand that only several degrees of temperature increase or decrease at global level can be disastrous for the human population, natural and all living species and we mustn't forget our recent "five century long XIV-XIX centuries" of the so called "little ice age" which left the world in a precarious natural and human situation so if this to where to occur the other way round and a "little hot age" things could be possibly even worse due to our present modern needs of technology and electronics for anything in our daily lives.



Technical data regarding types of EMP: EMP1, EMP2 and EMP3

EMP- TYPE E1
Nuclear EMPS

The EMP1 pulse is the very fast component of nuclear EMP. The EMP1 component is a very brief but intense electromagnetic field that can quickly induce very high voltages in electrical conductors. The EMP1 component causes most of its damage by causing electrical breakdown voltages to be exceeded. EMP1 is the component that can destroy computers and communications equipment and it changes too quickly for ordinary lightning protectors to provide effective protection against it.

The Earth's magnetic field quickly deflects the electrons at right angles to the geomagnetic field, and the extent of the deflection depends upon the strength of the magnetic field. At geomagnetic field strengths typical of the central United States, central Europe or Australia, these initial electrons spiral around the magnetic field lines in a circle with a typical radius of about 85 metres (about 280 feet). These initial electrons are stopped by collisions with other air molecules at an average distance of about 170 metres (a little less than 580 feet). This means that most of the electrons are stopped by collisions with air molecules before they can complete one full circle of its spiral around the Earth's magnetic field lines.

This interaction of the very rapidly-moving negatively-charged electrons with the magnetic field radiates a pulse of electromagnetic energy. The pulse typically rises to its peak value in about 5 nanoseconds. The magnitude of this pulse typically

decays to half of its peak value within 200 nanoseconds. (By the IEC definition, this EMP1 pulse is ended at one microsecond (1000 nanoseconds) after it begins.) This process occurs simultaneously with about 1025 other electrons.

There are a number of secondary collisions which cause the subsequent electrons to lose energy before they reach ground level. The electrons generated by these subsequent collisions have such reduced energy that they do not contribute significantly to the EMP1 pulse.

These 2 MeV gamma rays will normally produce an EMP1 pulse near ground level at moderately high latitudes that peaks at about 50,000 volts per metre. This is a peak power density of 6.6 megawatts per square metre.

The process of the gamma rays knocking electrons out of the atoms in the mid-stratosphere causes this region of the atmosphere to become an electrical conductor due to ionization, a process which blocks the production of further electromagnetic signals and causes the field strength to saturate at about 50,000 volts per metre. The strength of the EMP1 pulse depends upon the number and intensity of the gamma rays produced by the weapon and upon the rapidity of the gamma ray burst from the weapon. The strength of the EMP1 pulse is also somewhat dependent upon the altitude of the detonation.

There are reports of "super-EMP" nuclear weapons that are able to overcome the 50,000 volt per metre limit by the very nearly instantaneous release of a burst of gamma radiation of much higher energy levels than are known to be produced by second generation nuclear weapons. The reality and possible construction details of these weapons are classified, and therefore cannot be confirmed by scientists in the open scientific literature.

THERE ARE REPORTS OF "SUPER-EMP" NUCLEAR WEAPONS

These are able to overcome the 50,000 volt per metre limit by the very nearly instantaneous release of a burst of gamma radiation

EMP-TYPE EMP2
NNEMP-Non Nuclear EMP

The EMP2 component is generated by scattered gamma rays and inelastic gammas produced by weapon neutrons. This EMP2 component is an "intermediate time" pulse that, by the IEC definition, lasts from about 1 microsecond to 1 second after the beginning of the electromagnetic pulse. The EMP2 component of the pulse has many similarities to the electromagnetic pulses produced by lightning, although the electromagnetic pulse induced by a nearby lightning strike may be considerably larger than the EMP2 component of a nuclear EMP. Because of the similarities to lightning-caused pulses and the widespread use of lightning protection technology, the EMP2 pulse is generally considered to be the easiest to protect against.

According to the United States EMP Commission, the main potential problem with the EMP2 component is the fact that it immediately follows the EMP1 component, which may have damaged the devices that would normally protect against EMP2.

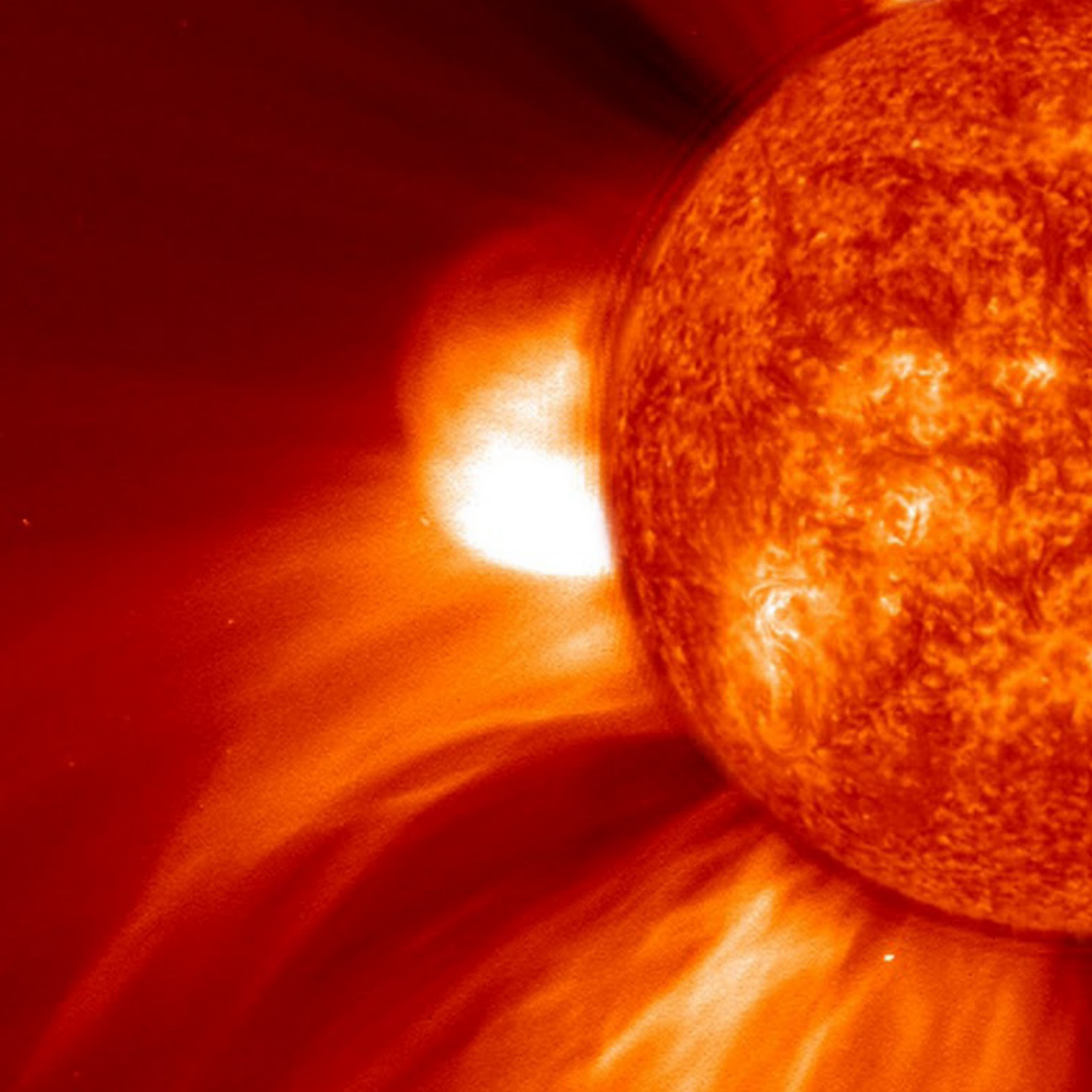
According to the EMP Commission Executive Report of 2004, "In general, it would not be an issue for critical infrastructure systems since they have existing protective measures for defence against occasional lightning strikes. The most significant risk is synergistic, because the EMP2 component follows a small fraction of a second after the first component's insult, which has the ability to impair or destroy many protective and control features. The energy associated with the second component thus may be allowed to pass into and damage systems.

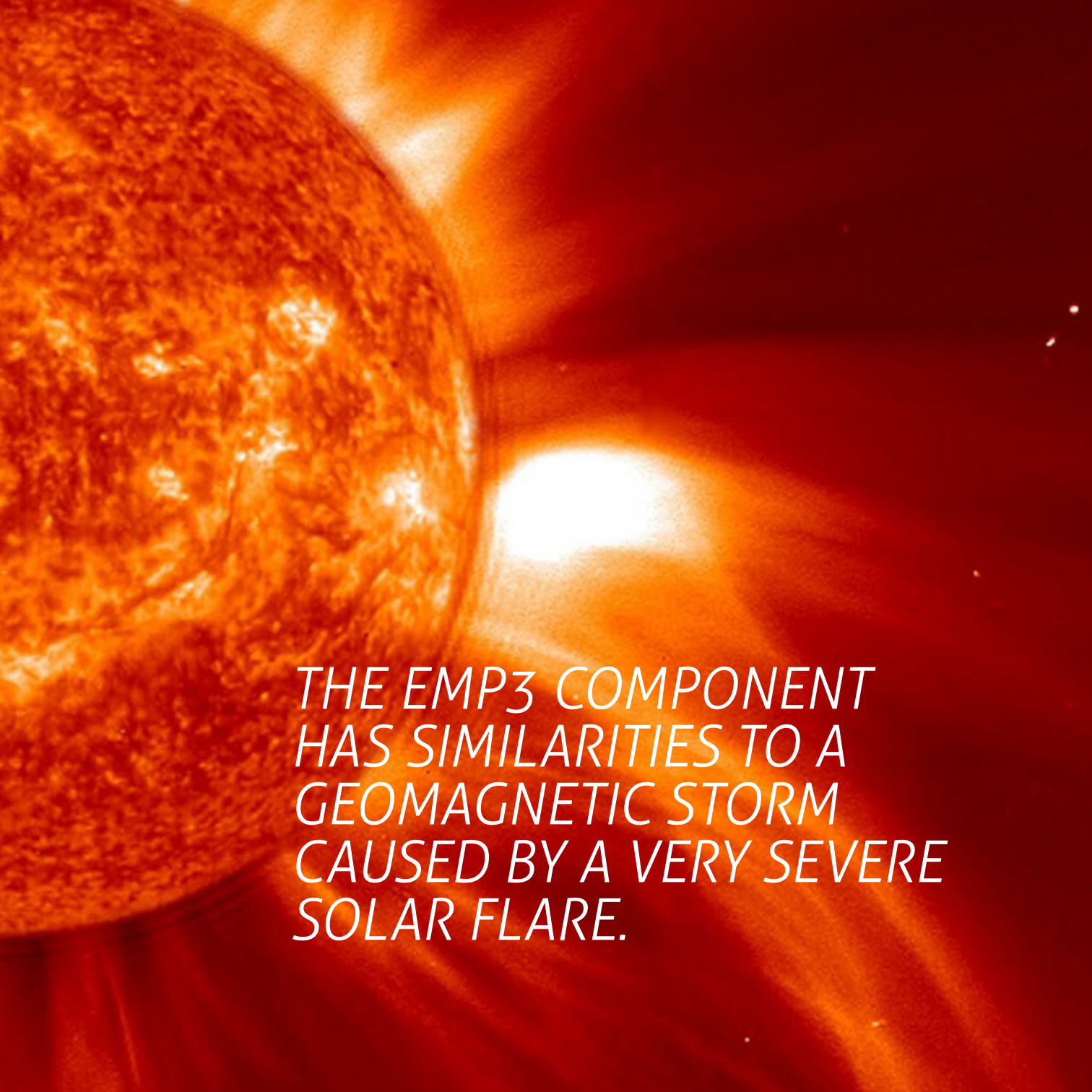
EMP-TYPE EMP3
Solar EMP

The EMP3 component is very different from the other two major components of nuclear EMP. The EMP3 component of the pulse is a very slow pulse, lasting tens to hundreds of seconds, that is caused by the nuclear detonation heaving the Earth's magnetic field out of the way, followed by the restoration of the magnetic field to its natural place. The EMP3 component has similarities to a geomagnetic storm caused by a very severe solar flare.[Like a geomagnetic storm, EMP3 can produce geo-magnetically induced currents in long electrical conductors, which can then damage components such as power line transformers.

Because of the similarity between solar-induced geomagnetic storms and nuclear EMP3, it has become common to refer to solar-induced geomagnetic storms as "solar EMP."[At ground level, however, "solar EMP" is not known to produce an EMP1 or EMP2 component.

There are at present proof of small EMPS attack weapons which emit short, high-energy pulses reaching 10 gigawatts, which could destroy complex electronics systems. This EMPS bomb attacks systems can now already presently take out electronic systems of nuclear or electric power plants, banks, trains, or even a simple telephone switchboard. These systems can be carried in boxes, suitcases, briefcases, computer bags, etc.





THE EMP3 COMPONENT HAS SIMILARITIES TO A GEOMAGNETIC STORM CAUSED BY A VERY SEVERE SOLAR FLARE.

Any type of EMPS attack from a thermonuclear warhead to a solar flare would cause ionospheric radiation and electronic effects to any national or international region, territory or nations. Once these issues and greater understanding of these new types of armaments were confirmed and the consequences understood most military computers and electronic systems were "prepared/protected" to minimize such damage, but civil systems remain extremely vulnerable.

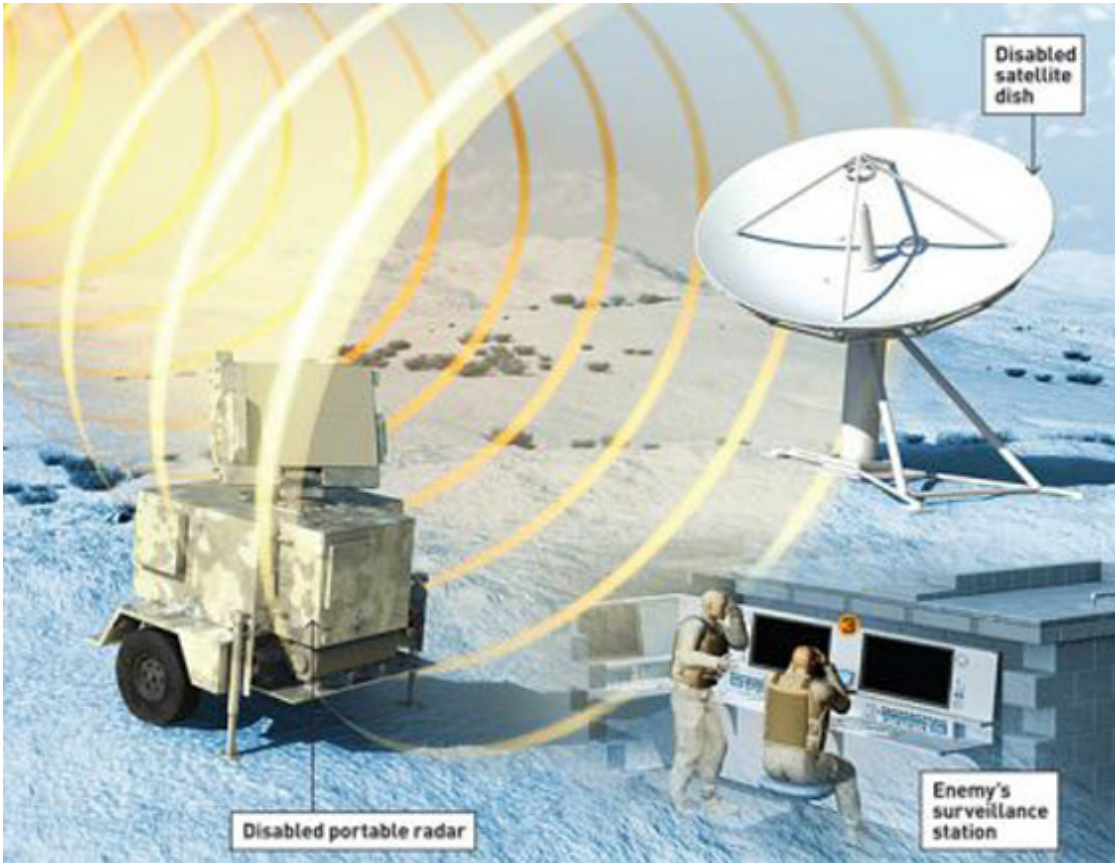
There are mainly two types of non-nuclear EMP (NNEMP) and one main nuclear High Altitude HEMP devices which have been developed since the Vietnam War mainly. One uses conventional explosives to induce the EMP; another uses a single-use, high-power microwave generation device.

These smaller versions of EMPS Bomb/Explosive Systems can be used by Special Forces teams who infiltrate the enemy's and detonate a device near their electronic devices. It destroys the electronics of all computer and communication systems in a quite large area. The EMP bomb can be smaller than a HERF gun to cause a similar amount of damage and is typically used to damage not a single target (not aiming in one direction) but to damage all equipment near the bomb.

The efficient execution of an Information Warfare campaign against a modern industrial or post-industrial opponent will require the use of specialized tools designed to destroy information systems. High Power Electro-magnetic Pulse generation techniques and High Power Microwave technology have matured to the point where practical electro-magnetic bombs are becoming technically feasible, with new applications in both Strategic and Tactical IW (Information Warfare).

Targets of the EMPS-bombs

- *THE TELECOMMUNICATION SYSTEMS*
- *THE NATIONAL POWER GRID*
- *FINANCE AND BANKING SYSTEMS*
- *THE NATIONAL TRANSPORTING SYSTEMS*
- *THE MASS MEDIA*



EMP Targets

A Radio Frequency Weapon is one that uses intense pulses of RF energy to destroy or degrade the electronics in a target. These weapons can be employed in a narrow beam over a long distance to a point target. They are categorized as High Power Microwave Weapons (HPM) and Ultra Wide Band Weapon (UWB). The phrase non-nuclear electro-magnetic pulse is sometimes used.

Advantages of the HPM

- *ALL WEATHER*
- *LOW COST PER ENGAGEMENT*
- *POSSIBLE TO ENGAGE MULTIPLE TARGETS*
- *NON-LETHAL TO HUMANS*
- *NOT ABLE TO DETECT ATTACKS*

What can Electro-magnetic EMPS do to a nation or attacked location?

The high temperatures and energetic radiation produced by nuclear explosions also produce large amounts of ionized (electrically charged) matter which is present immediately after the explosion. Under the right conditions, intense currents and electro-magnetic fields can be produced, generically called EMP (Electro-magnetic Pulse), that are felt at long distances. Living organisms are impervious to these effects, but electrical and electronic equipment can be temporarily or permanently disabled by them. Ionized gases can also block short wavelength radio and radar signals (fireball blackout) for extended periods.

The occurrence of EMP is strongly dependent on the altitude of burst. It can be significant for surface or low altitude bursts (below 4,000 m); it is very significant for high altitude bursts (above 30,000 m); but it is not significant for altitudes between these extremes. This is because EMP is generated by the asymmetric absorption of instantaneous gamma rays produced by the explosion. At intermediate altitudes the air absorbs these rays fairly uniformly and does not generate long range electro-magnetic disturbances.

The formation EMP begins with the very intense, but very short burst of gamma rays caused by the nuclear reactions in the bomb. About 0.3% of the bomb's energy is in this pulse, but it last for only 10 nanoseconds or so. These gamma rays

LIVING ORGANISMS ARE IMPE
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collide with electrons in air molecules, and eject the electrons at high energies through a process called Compton scattering. These energetic electrons in turn knock other electrons loose, and create a cascade effect that produces some 30,000 electrons for every original gamma ray.

In low altitude explosions the electrons, being very light, move much more quickly than the ionized atoms they are removed from and diffuse away from the region where they are formed. This creates a very strong electric field which peaks in intensity to 10 nanoseconds. The gamma rays emitted downward however are absorbed by the ground which prevents charge separation from occurring.

This creates a very strong vertical electric current which generates intense electro-magnetic emissions over a wide frequency range (up to 100 MHZ) that emanate mostly horizontally. At the same time, the earth acts as a conductor allowing the electrons to flow back toward the burst point where the positive ions are concentrated. This produces a strong magnetic field along the ground. Although only about 3x10^-10 of the total explosion energy is radiated as EMP in a ground burst (10^6 joules for 1 Mt bomb), it is concentrated in a very short pulse. The charge separation persists for only a few tens of microseconds, making the emission power some 100 gigawatts. The field strengths for ground bursts are high only in the immediate vicinity of the explosion. For smaller bombs they aren't very important because they are strong only where the destruction is intense anyway. With increasing yields, they reach farther from the zone of intense destruction. With a 1 Mt bomb, they remain significant out to the 2 psi overpressure zone (5 miles).

High altitude explosions produce EMPs that dramatically more destructive. About 3x10^-5 of the bomb's total energy goes into EMP in this case, 10^11

joules for a 1 Mt bomb. EMP is formed in high altitude explosions when the downwardly directed gamma rays encounter denser layers of air below. A pancake shaped ionization region is formed below the bomb. The zone can extend all the way to the horizon, to 2500 km for an explosion at an altitude of 500 km. The ionization zone is up to 80 km thick at the center. The Earth's magnetic field causes the electrons in this layer to spiral as they travel, creating a powerful downward directed electro-magnetic pulse lasting a few microseconds. A strong vertical electrical field (20-50 KV/m) is also generated between the Earth's surface and the ionized layer, this field lasts for several minutes until the electrons are recaptured by the air. Although the peak EMP field strengths from high altitude bursts are only 1-10% as intense as the peak ground burst fields, they are nearly constant over the entire Earth's surface under the ionized region.

The effects of these field on electronics is difficult to predict, but can be profound. Enormous induced electric currents are generated in wires, antennas, and metal objects (like missiles, airplanes, and building frames). Commercial electrical grids are immense EMP antennas and would be subjected to voltage surges far exceeding those created by lightning, and over vastly greater areas. Modern VLSI chips are extremely sensitive to voltage surges, and would be burned out by even small leakage currents. Military equipment is generally designed to be resistant to EMP, but realistic tests are very difficult to perform and EMP protection rests on attention to detail. Minor changes in design, incorrect maintenance procedures, poorly fitting parts, loose debris, moisture, and ordinary dirt can all cause elaborate EMP protections to be totally circumvented. It can be expected that a single high yield, high altitude explosion over an industrialized area would cause massive disruption for an indeterminable period, and would cause huge economic damages (all those damaged chips add up).

What is a Fireball Blackout? How can it block Radar Systems?

A separate effect is the ability of the ionized fireball to block radio and radar signals. Like EMP, this effect becomes important with high altitude bursts. Fireball blackout can cause radar to be blocked for tens of seconds to minutes over an area tens of kilometers across. High frequency radio can be disrupted over hundreds to thousands of kilometers for minutes to hours depending on exact conditions.

The technology base for EMPS-bombs

Explosively Pumped Flux Compression Generators (FCG)

The central idea behind the construction of FCGs is that of using a fast explosive to rapidly compress a magnetic field, transferring much energy from the explosive into the magnetic field. The initial magnetic field in the FCG prior to explosive initiation is produced by a start current. The start current is supplied by an external source, such a high voltage capacitor bank (Marx bank), a smaller FCG or the MHD device. A number of geometrical configurations for FCGs have been published. The most commonly used arrangement is that of the coaxial FCG.

Explosively Pumped Flux Compressor Generator

The coaxial arrangement is of particular interest in this context, as its essentially cylindrical form factor lends itself to packaging into munitions. In principle, any device capable of producing a pulse of electrical current of the order of tens of kilo Amperes to Mega Amperes will be suitable.

Explosive and Propellant driven MHD Generators

The fundamental principle behind the design of MHD devices is that a conductor moving through a magnetic field will produce an electrical current transverse to the direction of the field and the conductor motion. In an explosive or propellant driven MHD device, the conductor is a plasma of ionized explosive or propellant gas, which travels through the magnetic field. Current is collected by electrodes which are in contact with the plasma jet. The electrical properties of the plasma are optimized by seeding the explosive or propellant with suitable additives, which ionize during the burn.

High Power Microwave Sources (Vircator)

The fundamental idea behind the Vircator is that of accelerating a high current electron beam against a mesh (or foil) anode. Many electrons will pass through the anode, forming a bubble of space charge behind the anode. Under the proper conditions, this space charge region will oscillate at microwave frequencies. If the space charge region is placed into a resonant cavity which is appropriately tuned, very high peak powers may be achieved.

A FIREBALL BLACKOUT HAS THE ABILITY TO BLOCK RADIO AND RADAR SIGNALS

High frequency radio can be disrupted over hundreds to thousands of kilometers for minutes to hours

Coupling modes

The major problem area in determining lethality is that of coupling efficiency, which is a measure of how much power is transferred from the field produced by the weapon into the target.

Front door coupling occurs typically when power from an electro-magnetic weapon is coupled into an antenna associated with radar or communications equipment. The antenna subsystem is designed to couple power in and out of the equipment.

Back Door Coupling occurs when the electro-magnetic field from a weapon produces large transient currents or electrical standing waves (when produced by a HPM weapon) on fixed electrical wiring and cables interconnecting equipment, or providing connections to mains power or the telephone network.

A low frequency bomb built around an FCG will require a large antenna to provide good coupling of power from the weapon into the surrounding environment. Whilst weapons built this way are inherently wide band, as most of the power produced lies in the frequency band below 1 MHz compact antennas are not an option.

Microwave bombs have a broader range of coupling modes and given the small wavelength in comparison with bomb dimensions, can be readily focussed against targets with a compact antenna assembly.

The importance of glide-bombs as delivery means for HPM warheads is threefold. Firstly, the glide-bomb can be released from outside effective radius of

target air defences, therefore minimizing the risk to the launch aircraft. Secondly, the large standoff range means that the aircraft can remain well clear of the bomb's effects. Finally the bomb's autopilot may be programmed to shape the terminal trajectory of the weapon, such that a target may be engaged from the most suitable altitude and aspect.

Targeting Electro-Magnetic Bombs

The task of identifying targets for attack with electro-magnetic bombs can be complex. Certain categories of target will be very easy to identify and engage. Buildings housing government offices and thus computer equipment, production facilities, military bases and known radar sites and communications nodes are all targets which can be readily identified through conventional photographic, satellite, imaging radar, electronic reconnaissance and humint operations. These targets are typically geographically fixed and thus may be attacked providing that the aircraft can penetrate to weapon release range. With the accuracy inherent in GPS/inertially guided weapons, the electro-magnetic bomb can be programmed to detonate at the optimal position to inflict a maximum of electrical damage.

Mobile and camouflaged targets which radiate overtly can also be readily engaged. Mobile and relocatable air defence equipment, mobile communications nodes and naval vessels are all good examples of this category of target. While radiating, their positions can be precisely tracked with suitable Electronic Sup-

port Measures (ESM) and Emitter Locating Systems (ELS) carried either by the launch platform or a remote surveillance platform. In the latter instance target coordinates can be continuously data-linked to the launch platform. As most such targets move relatively slowly, they are unlikely to escape the footprint of the electro-magnetic bomb during the weapon's flight time.

Mobile or hidden targets which do not overtly radiate may present a problem, particularly should conventional means of targeting be employed. A technical solution to this problem does however exist, for many types of target. This solution is the detection and tracking of Unintentional Emission (UE). UE has attracted most attention in the context of TEMPEST surveillance, where transient emanations leaking out from equipment due poor shielding can be detected and in many instances demodulated to recover useful intelligence. Termed Van Eck radiation, such emissions can only be suppressed by rigorous shielding and emission control techniques, such as are employed in TEMPEST rated equipment.

Whilst the demodulation of UE can be a technically difficult task to perform well, in the context of targeting electro-magnetic bombs this problem does not arise. To target such an emitter for attack requires only the ability to identify the type of emission and thus target type, and to isolate its position with sufficient accuracy to deliver the bomb. Because the emissions from computer monitors, peripherals, processor equipment, switch-mode power supplies, electrical motors, internal combustion engine ignition systems, variable duty cycle electrical power controllers (thyristor or triac based), super-heterodyne receiver local oscillators and computer networking cables are all distinct in their frequencies and modulations, a suitable Emitter Locating System can be designed to detect, identify and track such sources of emission.

A good precedent for this targeting paradigm exists. During the SEA (Vietnam) conflict the United States Air Force (USAF) operated a number of night interdiction gun-ships which used direction finding receivers to track the emissions from vehicle ignition systems. Once a truck was identified and tracked, the gunship would engage it.

Because UE occurs at relatively low power levels, the use of this detection method prior to the outbreak of hostilities can be difficult, as it may be necessary to over-fly hostile territory to find signals of usable intensity. The use of stealthy reconnaissance aircraft or long range, stealthy Unmanned Aerial Vehicles (UAV) may be required. The latter also raises the possibility of autonomous electro-magnetic warhead armed expendable UAVs, fitted with appropriate homing receivers. These would be programmed to loiter in a target area until a suitable emitter is detected, upon which the UAV would home in and expend itself against the target.

CERTAIN CATEGORIES OF TARGET WILL BE VERY EASY TO IDENTIFY AND ENGAGE

With the accuracy inherent in GPS/inertially guided weapons, the electro-magnetic bomb can be programmed to detonate at the optimal position to inflict a maximum of electrical damage

TechnoKontrol Anti-EMPS Defence against EMPS-bombs and EMPS personal carried device attacks

The most effective defence against electro-magnetic bombs is to prevent their delivery by destroying the launch platform or delivery vehicle, as is the case with nuclear weapons. This however may not always be possible, and therefore systems which can be expected to suffer exposure to the electro-magnetic weapons effects must be electro-magnetically hardened.

The most effective method is to wholly contain the equipment in an electrically conductive enclosure; TechnoKontrol has developed the Anti-EMPS Protection Panels for such protection systems termed a Faraday cages or TK-EMPS Panel Protected Bunker-Buildings, which prevents the electro-magnetic field from gaining access to the protected equipment. However, most such equipment must communicate with and be fed with power from the outside world, and this can provide entry points via which electrical transients may enter the enclosure and effect damage. While optical fibers address this requirement for transferring data in and out, electrical power feeds remain an on-going vulnerability. The use of these protective systems with our own electromagnetic power supply as the TK-Omega RF5000 and TK-Orion RF5000 will also not to need to require external energy supply thus closing down all and any leaks thus allowing the base or bunker totally EMPS protected and anti EMPS attack proof.

Where an electrically conductive channel must enter the enclosure, electro-magnetic arresting devices must be fitted. A range of devices exist, however care must be taken in determining their parameters to ensure that they can deal with the rise time and strength of electrical transients produced by electro-magnetic devices. Reports from the US indicate that hardening measures attuned to the behaviour of nuclear EMP bombs do not perform well when dealing with some conventional microwave electro-magnetic device designs. Thus needing to use TechnoKontrols Anti-EMPS Protection Technology which as being simple and effective will not need to be applied to the internal electronics of any of the devices required for protection as the whole area, zone, section will be protected for all outside EMPS and thus needing to install an antenna to continue to operate with the outside world once the danger has been overcome or passed allowing normal operations to continue if desired.

TechnoKontrol Anti-EMPS Protection Panels will save any military, government or corporation to do significant "hardening/protecting" of their systems, as electro-magnetic damage to any single element of a complex system could inhibit the function of the whole system. Hardening new build equipment and systems will add a substantial cost burden. Older equipment and systems may be impossible to harden properly and may require complete replacement. In simple terms, hardening by design is significantly easier than attempting to harden existing equipment. Thus using TechnoKontrol Anti-EMPS technology will avoid mass change-over investments and allowing all electronics to continue their normal operations reducing cost, time, burden and protecting classified data, locations or confidential interests to outside operators.

Intermittent faults may not be possible to repair economically, thereby causing equipment in this state to be removed from service permanently, with consider-

able loss in maintenance hours during damage diagnosis. This factor must also be considered when assessing the hardness of equipment against electro-magnetic attack, as partial or incomplete hardening may in this fashion cause more difficulties than it would solve. Indeed, shielding which is incomplete may resonate when excited by radiation and thus contribute to damage inflicted upon the equipment contained within it.

Electromagnetic damage to any single element of a complex system could inhibit the function of the whole system.

Other than hardening against attack, facilities which are concealed should not radiate readily detectable emissions. Where radio frequency communications must be used, low probability of intercept (i.e... spread spectrum) techniques should be employed exclusively to preclude the use of site emissions for electro-magnetic targeting purposes. Appropriate suppression of UE is also mandatory.

EMPS Weapons

Complex and expensive experimental efforts are more timely and cost-effective if they are tested by theoretical and computational modelling. Such computations are made tractable by viewing the device as a system consisting of a pulsed power source, microwave source, and an antenna.

Electro-magnetic bombs are Weapons of Electronical Mass Destruction with applications across a broad spectrum of targets, spanning both the strategic and

tactical. As such their use offers a very high payoff in attacking the fundamental information processing and communication facilities of a target system. The massed application of these weapons will produce substantial paralysis in any target system, thus providing a decisive advantage in the conduct of Electronic Combat, Offensive Counter Air and Strategic Air Attack.

Because EMPS-bombs can cause hard electrical kills over larger areas than conventional explosive weapons of similar mass, they offer substantial economies in force size for a given level of inflicted damage, and are thus a potent force multiplier for appropriate target sets.

What will happen if we don´t anticipate this new modern day technological threat? Why must TechnoKontrol Anti-Electromagnetic EMPS technology should be used?

The non-lethal nature of electro-magnetic weapons makes their use far less politically damaging than that of conventional munitions, and therefore broadens the range of military options available.

EMPS-bombs can be an affordable force multiplier for military forces which are under financial and economic pressures to reduce force sizes, increasing both their combat potential and political utility in resolving disputes. Given the potentially high payoff deriving from the use of these devices, it is incumbent upon such military forces to appreciate both the offensive and defensive implications of this technology. It is also incumbent upon governments and private industry to consider the implications of the proliferation of this technology, and take measures to safeguard their vital assets from possible future attack.

ELECTRO-MAGNETIC BOMBS ARE WEAPONS OF ELECTRONICAL MASS DESTRUCTION WITH APPLICATIONS ACROSS A BROAD SPECTRUM OF TARGETS

With the accuracy inherent in GPS/inertially guided weapons, the electro-magnetic bomb can be programmed to detonate at the optimal position to inflict a maximum of electrical damage

All governments, armed forces, corporations, business people, civilians and society in general should be aware of this mass destructive technology and which at present has no indication to be stopped due to not needing extremely difficult minerals or chemicals or top global engineers or research teams to be created once it basics can be copied and developed. No one can also predict what the "Sun-EMP3" will do tomorrow as a simple point of view and that isn´t even taking into account the use of this EMPS technology in the hands of the wrong people with the wrong reasons.

What are our governments going to do to resolve this issue or at least to protect the population and nation in general if the worst came to the worst scenario? What are the emergency plans? Which bases will be protected?Whom will be selected to be protected and why? Who will protect our families in the case of civil un-rest, lack of food, electricity, transport, etc?

These are questions which must be answered today for tomorrow and a well planned security and safety plan must be put into place and in advance and at least thought, programmed and designed by any modern day nation with their national strategic and global interests at heart as their nations representatives to overcome this extremely viable and pragmatic near future threat from criminals, terrorists to state enemies or from natures natural wishes as solar radiation.

Thus needing TechnoKontrol's Anti-EMPS Protetection Technology as soon as possible in all strategic installations at least for the civilian protection and most importantly at military and government levels.

U.S. military definition of Electromagnetic Radiation Hazards (RADHAZ or EMR) in relation to Electromagnetic Pulses / Radiation / Solar Space Electromagnetic Radiation(EMPS)

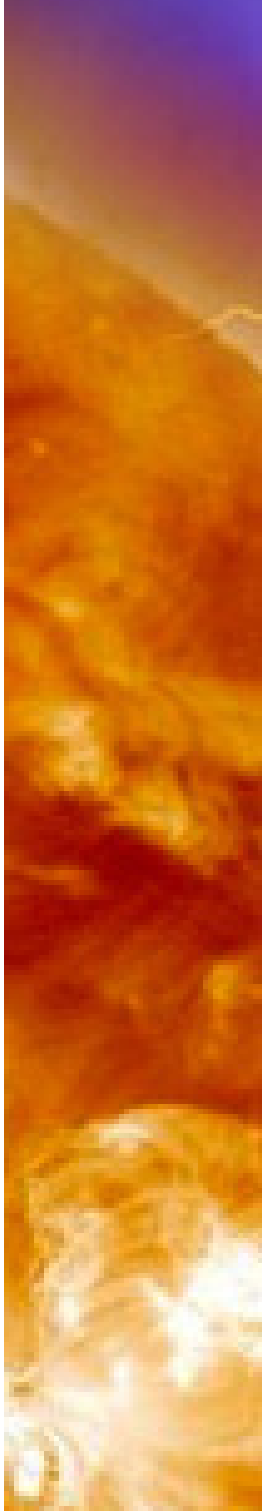
In Federal Standard 1037C, the United States government adopts the following definition:

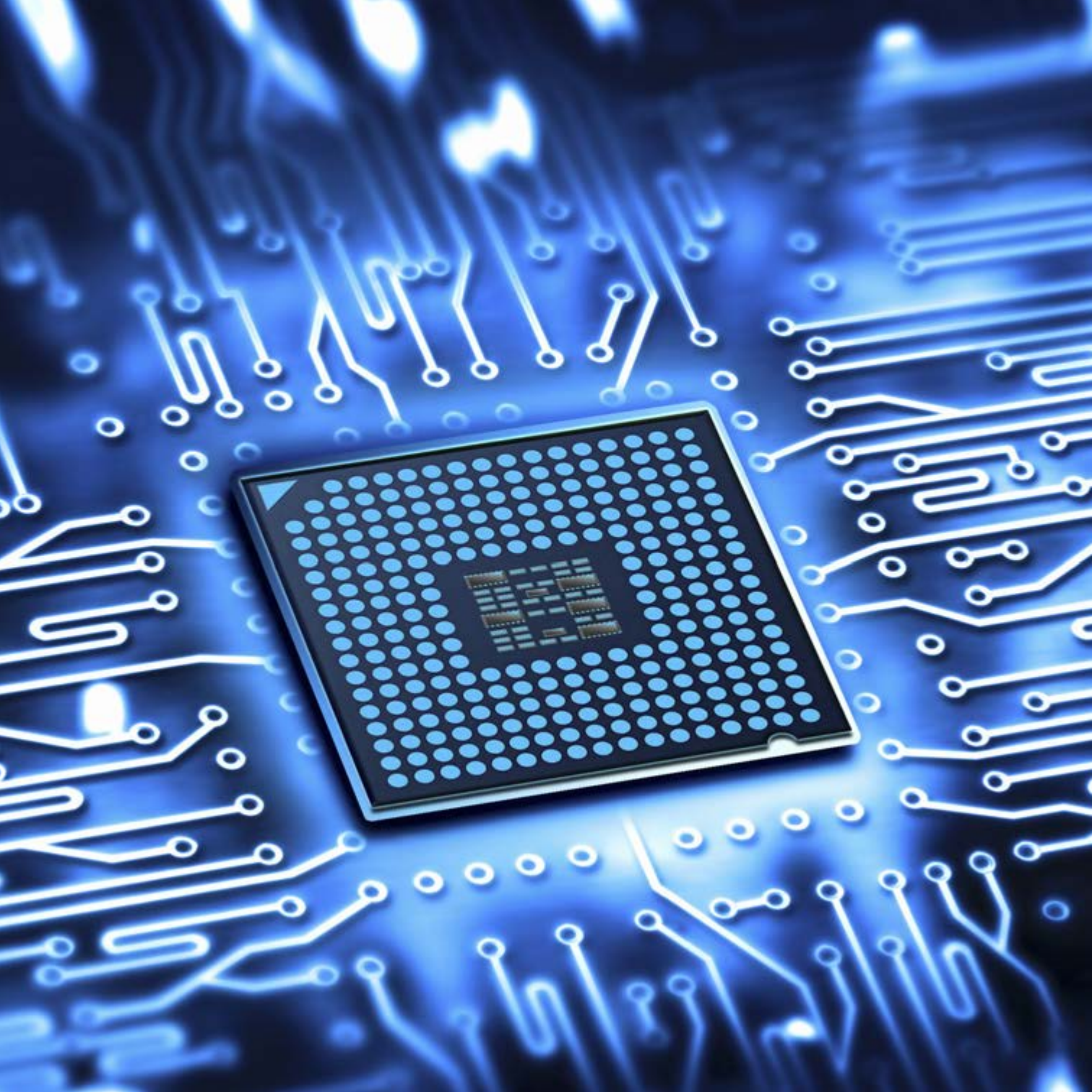
Electromagnetic radiation hazards (RADHAZ or EMR hazards)

Hazards caused by a transmitter/antenna installation that generates electromagnetic radiation in the vicinity of ordnance, personnel, or fueling operations in excess of established safe levels or increases the existing levels to a hazardous level; or a personnel, fueling, or ordnance installation located in an area that is illuminated by electromagnetic radiation at a level that is hazardous to the planned operations or occupancy.

These hazards will exist when an electromagnetic field of sufficient intensity is generated to: (a) induce or otherwise couple currents or voltages large enough to initiate electro-explosive devices or other sensitive explosive components of weapon systems, ordnance, or explosive devices; (b) cause harmful or injurious effects to humans and wildlife; (c) create sparks having sufficient magnitude to ignite flammable mixtures of materials that must be handled in the affected area. —Department of Defense Dictionary of Military and Associated Terms.

The Department of Defense Dictionary of Military and Associated Terms is a compendium of terminology used by the United States Department of Defense (DOD). It sets forth standard US military and associated terminology to encompass the joint activity of the Armed Forces of the United States in both US joint and allied joint operations, as well as to encompass the Department of Defense (DOD) as a whole. These military and associated terms, together with their definitions, constitute approved DOD terminology for general use by all components of the Department of Defense. The Secretary of Defense, by DOD Directive 5025.12, 22 August 1989, Standardization of Military and Associated Terminology, has directed its use throughout the Department of Defense to ensure standardization of military and associated terminology to those who need to know. The G-A-22 Group of Angelic Alliance to the United States and all who are members of any and all {United States Military, Defense and any and all Police known or unknown are protected.





Myths about EMPS electromagnetic attacks & solar radiation flares

An EMP incident will destroy all electronics. This occurs whether or not they are plugged in or turned on. This also affects automobiles, batteries, computers, medical equipment, etc. Needless to say, in such an instance, life as we know it will change dramatically. Even more distressing is the fact that the strike of an EMP is not likely to give any warning. You don't see it. You don't feel it. You are simply left with the sudden consequences and whatever preparedness you have on hand.

So, other than your preparedness supplies, your new best friend is a TK Anti-EMPS Panel made room, floor, building, home, office. In fact, with the knowledge of the protection that a TK Anti-EMPS room will provide the option to enjoy nearly as comfortable a lifestyle as you did prior to any electromagnetic pulse.

Allow us to dispel some myths about EMPS & Solar radiation flares

- Whether or not your electronics are plugged in, how long of an antenna you've got on something, what voltage it is, or whether or not they operate with batteries—all non-protected electronics will be affected by an EMP.

- Batteries will be affected, usually in the form of "shorting" as well.

- Electronic phone, computers, internet, energy, telecommunication systems will also be damaged and or destroyed.

- Surge protectors are useless in the event of an EMP exposure.

- Just because your car has rubber tyres, it will not be impervious to the effects of an EMP. Rubber containers are insufficient protection against an EMP.

- All TK-Anti EMPS Panel room, building, home MUST be grounded. If it's NOT grounded, then the Anti-EMPS room, bunker, building merely becomes a reflector or an amplifier.

- It makes no sense only to protect a cell phone, computer, television, for example, as the cell towers will be useless, no telecommunication and energy systems will be operational as also the national power grid will be down or destroyed. However, protecting these items

with additional –emergency power supplies as solar panels, fuel power generators, wind turbines, all these being essential in trying to communicate with other outside survivors and even using these protected computers, databases, programs as a first step bases to rebuild a new society in villages, towns, cities with the help of protected hardware and software systems which will assist us all immensely under these dramatic new conditions.

- TK Anti-EMPS containers, bunkers can also be used for storing survival electrical and battery items. (Including batteries).

- Most electronics are useful in the VHF/UHF/SHF range today and will need more substantial protection.

- TK Anti-EMPS rooms, containers, buildings should also be used to store solar power, wind and steam energy supply systems, fuel based engines, power generators, fridges, lighting, heating systems, etc.

- With an appropriately constructed TK-Anti EMPS room, floor, bunker, containers you will be able to protect that which is inside from the electromagnetic attack of an EMP incident or solar flare, thus preserving the function of all that is contained therein.

- TK Anti EMPS Panels block out external electrostatic fields and electromagnetic radiation. Many people make the mistake when it comes to compare an EMPS to a lightning bolt.

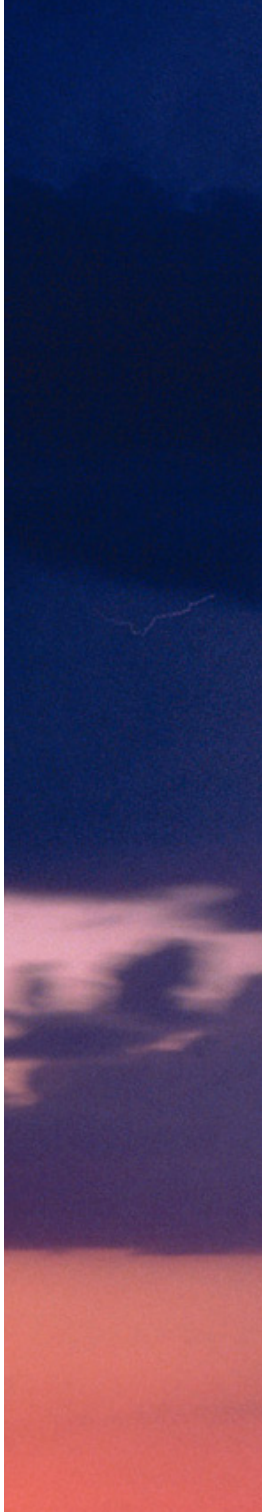
- The effects of an EMP and a direct lightning bolt are very similar, but they are not at all similar in terms of their visibility, and affect on the body. An EMP is more like a radio wave, not a visible bolt of light or electric current. It's the substrate layers of the diodes and transistors that make them susceptible to a magnetic pulse attack.

- Electronics are made up of diodes and transistors and substrate layers. A computer, car, television, and cell phones are made up of thousands of transistors, micro processors, electronics. When hit with a powerful magnetic pulse, the substrate layers are destroyed.

- Human and/or animal bodies, flora and fauna will not be affected. All living species and bodies consist of an electric volt, however, there's a difference between electricity and electronics.

- Any TK Anti-EMPS Panel made room, floor, building MUST be grounded. It has to be grounded in order to disperse the energy.

- The higher the frequency of the magnetic pulse, the faster it is. This is what causes the burn out. The cages must be grounded, continuously connecting, and the openings of them cannot be too large.



ALL NON-PROTECTED ELECTRONICS WILL BE AFFECTED BY AN EMP

However, human and/or animal bodies, flora and fauna will not be affected

Certificates

DSEAR

HAZLOC

Architects
Engineers
Building
Officials
Section

JAA

CE

SOUTHWEST

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